

to be taken in dealing with citrus pests. Forms of control adopted for similar pests on other plants might cause irrevocable injury. This renders the task of the entomologist doubly difficult.

#### REFERENCES.

- (I.) Gunn, D. The False Codling Moth (*Agryproplce leucotreta*, Meyr.). Union of S. Afr. Dept. Agric. Sci. Bull. 21, Pretoria, 1921, p. 4.
- (II) Gunn, D. The False Codling Moth (*Agryproplce leucotreta*, Meyr.). Farmer's Gazette, S. Africa, December 24th, 1925.

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### On the use of Names in the Study of Variation.

By ROGER VERITY, M.D.

Mr. Turner has successfully stated in a few lines the upshot of the discussions which have been carried on in these pages during the last few months. There is nothing new about it. It is the old question, which has remained unsolved ever since the times of Father Linneus, unsolved as a general principal, but invariably solving itself in practice in the same way. Every time a naturalist devotes particular attention to variation in a group of animals or plants, analyses it more thoroughly, restricts old names and erects new ones, there is a chorus of protests raised by those, who had the same materials before their eyes, but who had not taken the trouble to work them out. The saddest case amongst lepidopterists was that of poor Rambur, who was so laughed to scorn by his contemporaries for his discovery of several species of *Grypocera*, that they drove him frantic and he died of liver trouble as a result. Seventy years elapsed before it was realised that he was perfectly right, and now one wonders how so many clever entomologists can have been so foolishly blind and so stubborn in this respect. Again and again the same thing repeats itself, but usually a few years are sufficient to see the new names taken up into current use and lately also the old names, which during last century one was only acquainted with as useless synonyms, are being revived by revisors. A glance of this sort on past events is the most eloquent proof that names are not so much of a plague as some want to make them out. In one way it might seem as if it stood to reason that they constitute an additional effort with which we tax our brains artificially, besides the facts we have to remember. In practice, however, one finds that they turn out to be, not only useful, but necessary implements to assist memory. Man's brains have evolved so far in the sense of developing the power of speech and memory connected with it, that it has become a natural instinct to name every fact and every object he finds it necessary to recall. The first thing a child or an ignorant person asks about anything new they see is: What is it called? They often do not care to know anything more about it. In the same way, in every branch of human activity, most extraordinary words drawn from ancient or from foreign languages are invented for every instrument and for every phenomenon and are made use of technically. All this goes to show how names are not a useless artificial strain we put our brains to, but are a help we need if we wish to remember facts.

We also have the counterpart proof of this in the way a large number of excellent descriptions are utterly lost, when they are represented by no name; one never sees them quoted on any account by later authors. Rühl affords a good example in his *Pal. Grossschmett.*; he has described a large number of seasonal and geographical variations, but all those he has not named are ignored by Staudinger and by all others, whereas those he gave a name to are by this time well known. Some of the former have subsequently been named by others, who are credited for their discovery. This is only one case out of scores. There is nothing surprising about it. In our days of specialisation and minute analysis we are compelled to work with the help of catalogues. Is it possible in these to record a variation as: "the Var. described from such-and-such a place by Mr. so-and-so"? I doubt a catalogue under this form having much success. And, yet, if names were not to be given any more, the only alternative would be to stop working at variation, considering our knowledge quite sufficient. An extraordinary piece of presumption! There are also synthetic tables, which could not be drawn out, without a short way of designating each form. There are collectors, most of whom do not even consider varieties, if they cannot label them with a name, so that they do not collect them or pay a price for them, encouraging professional collectors to look out for them and discover new ones. In short, names are a necessity in so many ways that to try and stop developments on this line would not only be hopeless, but to my mind, absolutely a mistaken attempt, unless a better method of working out and designating variation were invented.

Where, on the contrary, warnings can never be too strong is in respect of the judgment required when describing and naming individual forms, which are infinite in number, and which, anyhow, should only be named once for all the species of a genus or even, in some cases, of larger groups. I cannot agree with Mr. Turner about seasonal variations, which are incomparably fewer and at the same time very important, because they are the most suitable by which to work out the causes that produce them. It has not yet been sufficiently grasped that the number of generations produced every year is perfectly definite, even in the south of Europe, for each species and that each generation has interesting characteristics. These, however, vary and replace each other in some cases, according to the altitude, the latitude and the nature of the surroundings, so that it is most necessary to have a short way of designating them in tables of variation and in local catalogues. Besides, if some years ago what was then supposed to be a single summer generation of some species had been simply called "II generation" and the September one had been called "III generation" the most dreadful confusion would now exist in literature when referring to them, because it has been found that there are two summer ones and that the September generation is the IV, so that at different times the same description would have been designated by different figures. Instead, by restricting the original name and by erecting a new one it is possible to make corrections of this sort quite clearly. Letters and numbers have always been found to be most unsatisfactory in designating variations and sooner or later they invariably have been replaced by names, ever since Geoffroi and others described several species and Rottenburg got the credit of their discovery by giving them names, in the place of the  $\alpha$ ,  $\beta$ ,  $\gamma$ , etc., designations used by the former.

In answer to Mr. Turner's particular remark about myself I might add that the practice of naming seasonal variations has been going on for the last century, so that there was no reason to leave a certain number of generations with characteristic features without names, when many others had them. I have had to give several, because it is I who have been fortunate enough, after a great many years observations, to fill rather a serious gap in our knowledge of the commonest diurnal species in this respect. Now, however, I believe there are in Europe very few more names of this sort to be given.

As to races, it is quite impossible to make rules and to establish theoretically, which should be named and which should not. It has happened over and over again that characters which for years had been considered most irrelevant and which Staudinger, for instance, had condemned in his *Catalog* by a disdainful "*Vix nominanda*," have turned out actually to be specific. Everyone knows that species are often so like each other that it needs a specialist to separate them and that, instead, most conspicuous individual differences can be produced by the slightest change in surroundings during the chrysalis stage. How, then, can we trust our judgment as to whether a character is irrelevant or not? Our only chance of working out facts as completely as possible is to record carefully all variations which we find to be prevalent in some localities; the day will come when their exact value and position can be determined. Any work done in this sense will be anything but useless. My experience makes me always more confident that extremely interesting results will be obtained in a very near future. The first has already been to make one realise the important difference between exerges, and subspecies in general, and simple races and the necessity of setting to work to separate them. It is next becoming obvious to those who have devoted enough attention to this subject that even races are far from being indefinite and innumerable, as it had always been thought. A few species, such as *Parussius apollo*, L., but very few, do vary geographically to an extraordinary extent and so erratically, that it seems hopeless to try and make out any law of variation from them, but, as a rule, the number and the distribution of the races of each species correspond to certain regions, or to local conditions within the latter, which can usually be made out to be altitude and moisture, so that four races can be expected in each region in sensitive species. In this *Journal* of 1922, p. 177, I have, in the Introduction to my Catalogue of Peninsular Italy, given a rough sketch of the zones in which Europe can be divided in connection with the distribution of species and their races. I will in future develop this interesting subject more fully. What I want to point out here is, that in the last few years not a single new race has been found in Peninsular Italy, whereas, before, so many came to my notice that, no doubt, some entomologists must have thought me crazy on account of the number of descriptions and names I published, when that region had not yet been fully worked out. Now, whatever new localities we explore, we find the same races turn up. No better proof could be given of how definite races are, notwithstanding the very different surroundings one meets with in such a large region. The Iberic Peninsula is confirming the same fact: during two years Querci and Romei found quite a number of new races to record to complete what was known about it, although it was already much better known than

Peninsular Italy, when we took it up; on the third year collecting in several regions of Spain scarcely produced anything new and this year Querci writes to me from Portugal that he has found the races described by Fabricius, Esper, Hübner and others, and races similar to Spanish ones, but extremely few novelties. I think we can conclude from such eloquent facts, that very soon the European races of butterflies will be known fairly completely, and that the work done during the first quarter of this century has carried Lepidopterology a stage further than it had reached during last century. A catalogue of the seasonal and geographical variations would already show a considerable advance on Standinger's of 1901. This, however, should not be our only aim, but the means of attaining much broader results in our search for truth, because, as Bates cleverly expressed it, the wings of butterflies are tablets on which nature has written her secrets. Let us not, through prejudices and lack of energy, shut our eyes to the Light that is sent to us.

[This letter has been printed with many misgivings. The real point as issue has been camouflaged by an excess of argument in favour of designating certain phases of natural phenomena the existence of which is not questioned. 'Tis the *method* of designating these phases of variation that is under discussion and it is considered by many of us that to treat these indefinite conceptions by naming them by the same method as we do definite conceptions is not only wrong, but confusing and unscientific, and adds excessively to our overburdened nomenclature and hinders rather than aids future developments of the study of these phases of variation.

Races, which are indefinite, compared with subspecies, can be much more conveniently called by the locality just as one does in conversation and discussion, *e.g.*, The Dover race, the Simplon race, etc., etc., and in this way can be catalogued just as well and with much better indication than a name such as *thompsoni*, *alpina*, etc., etc. Equally well can a catalogue contain I. gen., II. gen., etc., and such a designation is infinitely better from a practical point of view, than an irrelative name such as one often gets in these cases. These *are* "short ways of designating them" and quite available and suitable for use "in tables of variation and in local catalogues." I may add that those responsible for the *Zoological Record* are refusing to accept all racial names apart from subspecies. Thus entomologists are beginning to recognise that such names are too indeterminate to be treated as nomenclature.—H.J.T.]

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## CURRENT NOTES AND SHORT NOTICES.

A Meeting of the Entomological Club was held at "Durandesthorpe," 19, Hazlewell Road, Putney, on August 17th, 1927, Mr. H. Donisthorpe in the Chair.

Members present in addition to the Chairman—Messrs. H. Willoughby-Ellis, Jas. E. Collin, W. J. Kaye. Visitors—Dr. Karl Jordan, Rev. C. E. Tottenham, Messrs. F. Laing, G. C. Leman, W. H. T. Tams, G. J. Arrow, Hy. J. Turner, E. Step, K. G. Blair, P. Harwood.

The guests were received in the drawing-room where tea and light